

## ABSTRACT

A system and method for generating a neural network ensemble. Conventional algorithms are used to train a number of neural networks having error diversity, for example by having a different number of hidden nodes in each network. A genetic algorithm having a multi-objective fitness function is used to select one or more ensembles. The fitness function includes a negative error correlation objective to insure diversity among the ensemble members. A genetic algorithm may be used to select weighting factors for the multi-objective function. In one application, a trained model may be used to produce synthetic open hole logs in response to inputs of cased hole log data.